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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,206	01/04/2002	Peter Jenkner	211930US0	3471
22850	7580	11/13/2003	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			PADGETT, MARIANNE L	
1940 DUKE STREET			ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22314			1762	

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,206

Applicant(s)

Jen kner et al

Examiner

M.L. Padgett

Group Art Unit

1762

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 4/8/02 + 9/9/02
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-17 is/are pending in the application.
- Of the above claim(s) 14-16 is/are withdrawn from consideration.
- ☐ Claim(s) is/are allowed.
- ☒ Claim(s) 1-13 + 17 is/are rejected.
- ☐ Claim(s) is/are objected to.
- ☐ Claim(s) are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☒ All ☐ Some* ☐ None of the:

☒ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received

in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). (4/8/02) (9/9/02)
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

1. Applicant's election with traverse of group I, method claims 1-13 and 17 in Paper No. (8/12/2003) is acknowledged. The traversal is on the ground(s) that the proposed alternatives, i.e. pretreatment via "electron-beam, a polymeric primer, heating, etc." have not been shown to be materially different than the claimed processing pretreatment alternatives, i.e. corona discharge, flaming, glow discharge, irradiation with electromagnetic waves (i.e. light, γ -rays, x-rays) and plasma. Also, searching both sets of claims is not considered by applicant to place a serious burden on the office (e.g. the examiner). This is not found persuasive because one of ordinary skill in the art would immediately recognize that neither electron beams nor, polymeric primer coatings, read on any of the claimed pretreatments, and applicant has given no evidence to the contrary. Nor do the product claims necessitate any particular structure due to the types of plasma, flame or electromagnetic (light) radiation treatment, hence expanding the process search to include all possible products of fluoroalkyl-containing silicon compounds on any polymeric (or composite polymeric) substrate, regardless of how or whether or not it was pretreated, would place serious burden of uncompensated extra work on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-13 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Markush group of claims 1 and 17 is improper, in that its species are not mutually exclusive. Specifically, both corona discharge and glow discharge are types of plasmas. While a flame technically has a plasma at its heart, and all the listed techniques emit electromagnetic radiation (the corona, the glow, the light from the flame, etc.), the claimed flaming and "irradiation..." are sufficiently independent recognized pretreatment processes in the prior art, to be acceptable as separate species in the claimed Markush group. Also, given the Markush group in claim 1, how that relates to the separate (but not related by claim phraseology) of claim 9, is unclear. If the choice in claim 1 was electromagnetic

radiation, such as application of IR or UV, is claim 9 optional, combined or what? These listings constitute 2 separate sets of possible choices for pretreatment that are overlapping, but not clearly related.

In claims 5 and 6, when is the substrate exposed to the claimed light? Are these claims intended to select "irradiation..." pretreatment option from the Markush group? If so it should be positively stated.

Use of relative terms that lack clear metes and bounds in the claims; or in a definition in the body of the specification or in cited relevant prior art, is vague and indefinite. In claim 9, see "low" in "low pressure". Note that "low frequency" and "high frequency" are both art recognized terms with ranges of frequencies associated therewith, hence defined. Also, the slash symbol "/" is ambiguous as it can variously mean "and", "or" or "and/or."

In claim 10, the Markush group, which is closed terminology, appears to contain open terminology within its choices. The intent of this is confusing, possibly contradictory.

In claim 11, line 4, the phrase "surface thus treated..." does not conform to the language of the independent claims, hence this limitation's relationship thereto is uncertain. While the examiner assumes (guesses) that applicant is intending to refer to "coating said...substrate" in claim 1, line 5, the phrasing needs clarification.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 5-8, 10-11 and 17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8, 10-13 and 15-17 of copending Application No. 10/137,445. Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations are claimed in different orders, and are using different nomenclature, the overall content of the sets of claims overlaps. The “fluoroalkyl-containing silicon compound” of the present application reads on the “perfluoroalkylsilanes” of the (445) application dependent claims that provide the hydrophobic properties, hence while this case’s claims do not mention hydrophobic, they inherently produce such surfaces. The (445) application’s carrier that comprises a

binder, implies polymeric or plastic substrate, as is substantiated by its claim 12, containing species overlapping with those of the present claim. The various particles employed by the 445 application, while more specific in composition than that of the instant claims, are encompassed by the comprising language, such that they read on the broader limitation. This application's claim of pretreatment by irradiation with electromagnetic (E&M) waves is read on by the curing step of the (445) case, where radiant energy (a type of E&M energy) is used, because this application may be before the deposition of the hydrophobic treatment that may include per fluoroalkyl silanes.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. While some of the other related applications listed by applicant, appear to have the potential for creating new judicial double patenting (J.D.P.) issues, from the claims as provided, they do not appear to involve JDP at this time.

6. Claims 1, 5-6, 11-12 and 17 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Takai et al (6,207,621B1).

In Takai et al, see the abstract; Col. 1, lines 8-13; Col. 3, lines 36-58; Col. 4, lines 5-50, esp. line 49 for polymer substrates and lines 25-42 for alternative of plasma (oxygen) or UV pretreatments of base material (substrate); and claims 1-3, 7 and 12. Note polymeric and plastic are considered to be synonyms.

Note, Takai et al specifies vacuum ultraviolet, but does not list wavelengths therefore, however the examiner takes notice that this range is defined as 100-200 nm.

7. Claims 1-2, 7-13 and 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Taniguchi et al (4,940,602).

In Taniguchi et al, see the abstract; Col. 1, lines 10-16 (general process and use); Col. 2, lines 32-65 (substrate materials, inclusive of a polymeric hard coat on plastic substrate); Col. 3, lines 43 – Col. 4⁺, esp. col. 3, lines 55 – Col. 4, line 2 for F-containing organopolysiloxanes based films, using preferred

compounds, such as trifluoropropyltrialkoxo silane; and col. 6, lines 39 – 60 for gas activation treatments of hard coat in preparation for F-containing top coat, via corona or D.C., or L.F., or H.F., or microwave discharges under reduced pressure. Useful gases are taught to include O₂, air, N₂, Ar, etc. Col. 7, lines 1-6 teaches low temperature thermal curing of applied liquid coatings, with Ex. 1, part (4) on col. 10, providing exemplary details, such as plasma pretreatment time of 1 min., and multiple post treatments via heat to cure including 12 minutes at 82°C for the F-containing organosiloxane film.

8. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al as applied above, and alone, or in view of Kai (5,580,606)

Taniguchi et al does not discuss any specific pressure ranges to be used with their plasma discharge processes, however their taught reduced pressure is inclusive of the claimed ranges, and it would have been obvious for one of ordinary skill in the plasma art to optimize pressure according to the specific apparatus, gases, and substrate material employed, etc.

Alternately, Kai (abstract; Col. 1, lines 8-10 and 43-48; summary; Col. 5; Examples and claims 1-4), who is teaching an analogous process to that of Taniguchi et al, except specifying use of microwave plasma and not giving any specific F-containing silane compounds for their hydrophobic solution, particularly teach that parameters of the plasma (gas type, pressure, power) may be optimized to obtain high rates without damaging the surface, and employ microwave plasma at 0.14 mbar in Example 1. Therefore, as one of Taniguchi et al's suggested pretreatment includes microwave discharge (i.e. plasma), it would have been obvious to use pressure as suggested therefore by Kai, in the process of Taniguchi et al.

9. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takai et al or Taniguchi et al, is discussed above.

These claims do not say when the substrate is exposed to these wavelengths of light or what purpose it serves with the process, or if it even effects any limitations of claim 1. However, while not

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taught, any of the products made by either Takai et al or Taniguchi et al may be exposed on some surface to sunlight or indoor fluorescent lighting before or after the taught treatment, hence would obviously have been expected to be exposed to wavelengths in the range claimed at some point in their lifetime.

10. Claims 1, 7-11 and 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ogawa et al (5,437,894).

In Ogawa et al, see the abstract; Figures 1-7, 37, 40, 45(b); Col. 1, lines 10-16; Col. 2, lines 26-34 and 43-68, esp. lines 61-64 and 67; Col. 4, lines 10-49; Col. 9, lines 33-37; Col. 13, line 65-Col 14, line 10; Ex.15-16 and claims 1-2 and 8. Note the specific examples treating PET or polyolefin substrates used oxygen-containing glow discharge plasma at 10^{-1} to 10^{-2} Pa (i.e. 10^{-3} to 10^{-4} mbar) for 1 to 10 minutes.

11. Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al (894).

While Ogawa et al does not specifically teach the gases or parameters of these claims, it would have been obvious to one of ordinary skill in the art that the taught O-containing gas would have been inclusive of mixtures using common plasma gases like Ar or common sources like air, especially for taught corona options (Col. 9, lines 33-37), because these are conventional for types of taught plasma and inclusive of the containing phrasing.

While the exemplary gas pressure is at the edge of applicants' claimed range of 0.001 – 0.99 mbar, it would have been obvious for one of ordinary skill to optimize pressure as discussed in section 9, and it is further noted that glow discharge plasma are named such because they produce light, although unless stated, the PTO can not determine what wavelengths are present.

12. Other art of interest includes Ogawa et al 5,338,579 with similar teachings to (894) above; Takisue et al which UV or plasma pre-treats carbonaceous substrates before depositing claimed compounds; the Japanese patent JP35-6,127,196A to Taoda et al who irradiates polyolefin with X-rays

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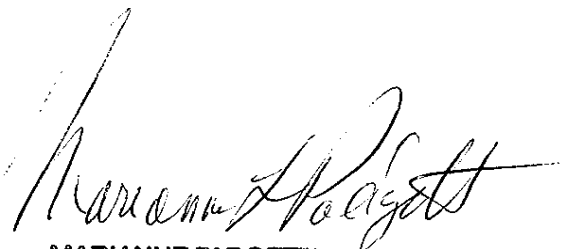
before resin coating with F- or Si- containing resins. Pappas, ed. provides a range definition for vacuum UV light.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M L. Padgett whose telephone number is 703-308-2336, or after mid December (571) 272-1425. The examiner can normally be reached on Monday-Friday from about 8:30 am to 4:30 pm.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

M. Padgett/lap
October 29, 2003
November 6, 2003



MARIANNE PADGETT
PRIMARY EXAMINER